

Frontend Development with React

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What is React?

- Officially - “A Javascript library for building user interfaces”
- Unofficially - A dope JS library that makes it really easy to develop responsive web pages
- Developed by Facebook
- Rival - Angular

What I'm Going to Assume

- You have a basic understanding of Javascript

What I'm NOT Going to Assume

- You have Node and npm installed
- You are familiar with ES6 syntax
- You have a very basic understanding of Object-Oriented Programming
- You have familiarity with functional programming
- You have created a dynamic website before (using jQuery, Angular, etc.)

Key Takeaways

- How to *actually* get started
- JSX
- Components
- Props
- State
- `render()`
- Virtual DOM
- Functional Components

How to *Actually* Get Started

Installing Node and npm

- Use your own computer, not CS50 IDE
- Node allows us to run Javascript on our desktop (rather than in our browser)
- npm stands for Node package manager - lets us install useful things that other people have created
- Find them here - <https://nodejs.org/en/> - install 8.9.0 (LTS)

Install create-react-app

- `npm install -g create-react-app`
- Helpful tool created by Facebook to get you started faster

Create and view the project

- `create-react-app react-seminar`
- `cd react-seminar`
- `npm start`
- Go to `localhost:3000` if not automatically redirected
- Congrats!

Digging into the Code

JSX

- Allows us to easily mix JavaScript and HTML
- We can return HTML and it will display properly

Component

- Fundamental building block for React
- Have internal state and external props
- Can be nested inside of each other and used across multiple files and even projects

State

- Internal information about a component - the stuff that might be changing dynamically
- We have some initial state
- Change it with `this.setState()`

render()

- Called whenever the state changes
- Here, we decide what the user should see based on the state
- Notice that even though we're calling render on every state change, not everything is getting reloaded on the page
- Virtual DOM - computing the most efficient way to add/delete things from the page

Creating a Simple To-Do Application

Props

- External quantities handed to the component
- The component cannot change these

Functional Components

- Only accept props
- No internal state
- Functions instead of classes

Next Steps

- Redux - global state container
- React Router - Single Page Applications with Route Changes

Questions?

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